

Amendment to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A multi-function printer which is a combination of a scanner and a printer, comprising:

a first data storage in which scan data scanned in by the scanner is stored, wherein one line of a scan operation of the scanner corresponds to one line of the scan data in the first data storage;

a classificational executer which reads out the scan data from the first data storage, wherein the printer performs printing by a plurality of print passes for one line of printed image and the classificational executer classifies the scan data in compliance with the number of the print passes, wherein the number of the print passes is defined by a print mode of a high definition printing operation;

a second data storage in which the classified scan data is stored in compliance with the print passes, wherein a capacity of the second data storage is less than one page of the scan data and the classified scan data is stored in the second data storage by a unit of one band which is equal to a height of a print head of the printer; and

a print executer which reads out the classified scan data from the second data storage by each of the print passes, generates print image data having a data format

suitable for a print processing on the basis of the read-out scan data without classifying the scan data, and drives ~~a-the~~ print head of the printer on the basis of the print image data in each of the print passes.

2. (currently amended) The multi-function printer as set forth in claim 1, wherein a resolution of the ~~printer-~~print head is coarser than a resolution to be printed on a print medium by the printer.

3. (canceled)

4. (previously presented) The multi-function printer as set forth in claim 2, wherein there are two print passes for one line of the scan data, and the classificational executer classifies the scan data into even bits thereof and odd bits thereof and stores them in the second data storage.

5. (canceled)

6. (currently amended) The multi-function printer as set forth in ~~claim~~
~~5~~claim 1, wherein the classificational executer classifies the scan data into even bits and odd bits in every line of the scan data, and stores data of the even bits of the scan data in an even bit data storage in the second data storage and stores data of

the odd bits of the scan data in an odd bit data storage in the second data storage,
and

wherein the print executer executes an interlaced processing in which the
scan data is extracted from the even bit data storage and the odd bit data storage
every other line respectively, and executes the printing.

7. (original) The multi-function printer as set forth in claim 6, wherein the
classificational executer has a latch buffer of a predetermined data length, and
latches the scan data of the predetermined data length into the latch buffer and
obtains the scan data to be stored in the even bit data from even bits of the latch
buffer and the scan data to be stored in the odd bit data from odd bits of the latch
buffer.

8. (previously presented) The multi-function printer as set forth in claim 6,
wherein the classificational executer comprises:

an even look up table in which even bit data obtainable by extracting even bits
from the scan data of the predetermined data length are stored for all patterns of the
scan data of the predetermined data length; and

an odd look up table in which odd bit data obtainable by extracting odd bits
from the scan data of the predetermined data length are stored for all patterns of the
scan data of the predetermined data length,

wherein the classificational executer reads out the scan data from the first data storage by the predetermined data length for every time and compares the read-out scan data with the even look up table so that the scan data to be stored in the even bit data storage is obtained, and compares the read-out scan data with the odd look up table so that the scan data to be stored in the odd bit data storage is obtained.

9. (currently amended) The multi-function printer as set forth in claim 6, wherein the print executer alternately repeats:

a processing for reading out the scan data from one of the even bit data storage and the odd bit data storage every K lines, performing one print pass and feeding the print medium by F lines, and;

a processing for reading out the scan data from the other of the even bit data storage and the odd bit data storage every K lines, performing one print pass and feeding the print medium by F lines,

wherein the ~~relationship between the K and the F is prime to each other~~K and the F are relatively prime.

10. (original) The multi-function printer as set forth in claim 6, wherein the classificational executer is constituted of hardware.

11. (original) The multi-function printer as set forth in claim 10, wherein the interlaced processing executed in the print executer is performed as a software processing.

12. (original) The multi-function printer as set forth in claim 11, wherein the software processing is executed in a central processing unit, which is shared between the scanner and the printer and which is the only one in the multi-function printer.

13. (previously presented) The multi-function printer as set forth in claim 1, wherein the first data storage and the second data storage are provided in different memories.

14. (currently amended) A multi-function printer which is a combination of a scanner and a printer and capable of printing one line of a scan data, which is scanned in by the scanner, in the printer by movements of a print head in a main scan pass direction by X times, comprising:

a first data storage in which scan data scanned by the scanner is stored, wherein one line of scan operation of the scanner corresponds to one line of the scan data in the first data storage;

a classificational storing section which reads out the scan data from the first data storage and classifies the scan data according to an appropriate data

format for each time of the X times of the movement of the print head in the main scan pass ~~direction~~ direction, wherein the number of times of movement of the print head is defined by a print mode of a high definition printing operation, and which stores them in a second data ~~storage~~ storage,

wherein a capacity of the second data storage is less than one page of the scan data and the classified scan data is stored in the second data storage by a unit of one band which is equal to a height of the print head;

a print image data generator which sequentially reads out the classified scan data from the second data storage and generates a print image data on the basis of the read-out scan data for every reading out without classifying the scan data; and

a print executer which executes printing with the print head moved in the main scan pass direction on the basis of the print image data generated by the print image data generator.

15. (original) The multi-function printer as set forth in claim 14, wherein the classificational storing section is constituted of hardware.

16. (original) The multi-function printer as set forth in claim 15, wherein the print image data generator is implemented via a software processing, and the multi-function printer has only one central processing unit, which executes the software processing and which is shared between the scanner and the printer.

17. (currently amended) The multi-function printer as set forth in claim 14, wherein the print image data generator also executes an interlaced processing in which data is extracted from the scan data stored in the second data storage in every predetermined lines.

18. (canceled).

19. (currently amended) A control method for a multi-function printer, which is a combination of a scanner and a printer, comprising the steps of:

scanning data using the scanner, and storing the scanned data in a first data storage, wherein one line of a scan operation of the scanner corresponds to one line of the scan data in the first data storage;

reading out the scan data from the first data storage;
classifying the scan data read out from the first data storage according to a format that complies with the number of print passes performed for one line of printed image, wherein the number of times of movement of the print head is defined by a print mode of a high definition printing operation, according to which the printer generates print image data in actual printing;

storing the classified scan data in a second data storage in compliance with the print passes.

wherein a capacity of the second data storage is less than one page of the scan data and the classified scan data is stored in the second data storage by a unit of one band which is equal to a height of a print head of the printer;

reading out the classified scan data from the second data storage by each of the print passes; and

generating the print image data, which has a data format appropriate for a print processing, on the basis of the read-out scan data without classifying the scan data; and

driving a print head of the printer on the basis of the print image data in each of the print passes.

20. (currently amended) A control method for a multi-function printer which is a combination of a scanner and a printer and capable of printing one line of a scan data, which is scanned by the scanner, in the printer by movements of a print head in a main scan pass direction by X times, comprising the steps of:

storing scan data scanned by the scanner in a first data storage, wherein one line of scan operation of the scanner corresponds to one line of the scan data in the first data storage;

reading out the scan data from the first data storage;

classifying the scan data according to an appropriate data format for each of the X times of the movement of the print head in the main scan pass

direction direction, wherein the number of times of movement of the print head is defined by a print mode of a high definition printing operation;

storing the classified scan data in a second data storage,

wherein a capacity of the second data storage is less than one page of the scan data and the classified scan data is stored in the second data storage by a unit of one band which is equal to a height of a print head of the printer;

reading out the classified scan data sequentially from the second data storage to generate print image data on the basis of the scan data for every reading out without classifying the scan data; and

executing printing with the print head moved in the main scan pass direction on the basis of the generated print image data.

21. (currently amended) A multi-function printer which is a combination of a scanner and a printer, comprising:

a first data storage in which first data based on scan data scanned in by the scanner is stored;

a classificational executer which reads out the first data from the first data storage, wherein the classificational executer classifies the first data in compliance with a position of the first data so that the printer performs printing by a plurality of print passes for one line of printed image and the classification executer classifies the scan data in compliance with the number of the print passes, wherein the

number of times of movement of the print head is defined by a print mode of a high definition printing operation;

a second data storage in which the classified first data is stored in compliance with the print passes, wherein a capacity of the second data storage is less than one page of the scan data and the classified scan data is stored in the second data storage by a unit of one band which is equal to a height of a print head of the printer;
and

a print executer which reads out the classified first data from the second data storage by each of the print passes, generates a print image data used for a print pass to be processed on the basis of the classified first data in accordance with the print pass to be processed, and drives a print head of the printer on the basis of the print image data in each of the print passes.

22. (previously presented) The multi-function printer as set forth in Claim 21, wherein a classification number of the first data is related to a number of the print passes.

23. (previously presented) The multi-function printer as set forth in Claim 21, wherein the first data includes a plurality of bits, and wherein the classificational executer classifies the bits included in the first data in compliance with the position of each bit in the first data.